IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with <u>underlining</u> and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 1-17 and ADD claim 18 in accordance with the following:

1. (currently amended) A document organizing apparatus for organizing a group of documents based on keywords, comprising:

<u>a</u> relation extracting ~~means for extracting~~ <u>unit to extract one of</u> a hierarchical relation and an associative relation between given keywords <u>as an extracted relation, the hierarchical and associative relations representing relations between a first keyword included in a first hierarchical relation and a second keyword included in a second hierarchical relation</u>;

<u>a</u> generating ~~means for generating~~ <u>unit to generate</u> directory information for accessing the group of documents ~~with~~ <u>by using</u> the ~~hierarchical relation and the associative relation as links~~ <u>extracted relation as a link between the first and second keywords</u>; and

<u>an</u> outputting ~~means for outputting~~ <u>unit to output</u> the directory information.

2. (currently amended) The document organizing apparatus as set forth in claim 1, wherein said relation extracting ~~means~~ <u>unit</u> includes:

<u>a</u> rule extracting ~~means for extracting~~ <u>unit to extract</u> an association rule containing a pair of keywords from the given keywords; and

<u>a</u> rule evaluating ~~means for evaluating~~ <u>unit to evaluate</u> the association rule and ~~assigning~~ <u>to assign</u> one of the ~~hierarchical~~ <u>extracted</u> relation~~, the associative relation,~~ and an equivalent relation to the pair of keywords.

3. (currently amended) The document organizing apparatus as set forth in claim 2,

wherein said rule extracting ~~means~~ <u>unit</u> extracts a pair of keywords with a high cooccurrence frequency as the association rule, and

wherein said rule evaluating ~~means~~ <u>unit</u> assigns a relation of the extracted pair of keywords thereto based on the <u>high</u> cooccurrence frequency.

4. (currently amended) The document organizing apparatus as set forth in claim 1, wherein said relation extracting ~~means~~ unit includes:

~~means for extracting~~ a unit to extract a pair of keywords with a high cooccurrence frequency from the given keywords; and

~~means for assigning~~ a unit to assign one of the ~~hierarchical~~ extracted relation, ~~the associative relation,~~ and an equivalent relation to the pair of keywords based on the high cooccurrence frequency of the pair of keywords.

5. (currently amended) The document organizing apparatus as set forth in claim 1, wherein said relation extracting ~~means~~ unit divides one of the given keywords into character sub-strings and extracts an inclusion relation between the given keyword and the character sub-strings as the hierarchical relation.

6. (currently amended) The document organizing apparatus as set forth in claim 1, wherein said relation extracting ~~means~~ unit includes:

~~means for extracting~~ a unit to extract the first hierarchical relation from a pair of keywords based on a cooccurrence frequency thereof;

~~means for extracting~~ a unit to extract the second hierarchical relation from an inclusion relation between one of the given keywords and character sub-strings thereof; and

~~means for merging~~ a unit to merge the first hierarchical relation, the second hierarchical relation, and another hierarchical relation given from ~~the~~ outside said document organizing apparatus.

7. (currently amended) The document organizing apparatus as set forth in claim 1,

wherein said relation extracting unit extracts both the hierarchical and associative relations,

wherein said generating ~~means~~ unit generates a hypertext index having at least one of a path from a top category to a directory, a higher hierarchical word of the directory, a sub-category of the directory, an associative word of the directory, and a kana/alphabetic order index, as the directory information using the hierarchical ~~relation~~ and ~~the~~ associative relations, and

wherein said outputting ~~means~~ unit organizes the group of documents corresponding to the generated hypertext index and outputs an organized result.

8. (currently amended) The document organizing apparatus as set forth in claim 7, wherein said generating ~~means~~ unit automatically calculates a path from a keyword of the top category to each keyword using the hierarchical ~~relation~~ and ~~the~~ associative relations and sets an obtained path as the path from the top category to the directory.

9. (currently amended) The document organizing apparatus as set forth in claim 1, further comprising: ~~means for adding~~ a unit to add an equivalent relation between keywords based on a synonym list given from ~~the~~ outside said document organizing apparatus, and

wherein said generating ~~means~~ unit generates directory information including the equivalent relation.

10. (currently amended) The document organizing apparatus as set forth in claim 1, further comprising: ~~means for deleting~~ a unit to delete a keyword based on an unnecessary word list given from ~~the~~ outside said document organizing apparatus, wherein said generating ~~means~~ unit generates directory information excluding the deleted keyword.

11. (currently amended) The document organizing apparatus as set forth in claim 1, further comprising: ~~means for inputting~~ a unit to input a given hierarchical relation between keywords, wherein said generating ~~means~~ unit generates directory information using the given hierarchical relation.

12. (currently amended) The document organizing apparatus as set forth in claim 1, further comprising:

a unit to store old keywords; and

~~means for comparing~~ a comparison unit to compare the given keywords and ~~the~~ old keywords and identifying a new keyword, wherein said outputting ~~means~~ unit outputs the new keyword in a highlighted format.

13. (currently amended) The document organizing apparatus as set forth in claim 1,
further comprising~~: accessing means for accessing~~ a unit to access the directory information, and

wherein a user accesses the group of documents through the directory information.

14. (currently amended) The document organizing apparatus as set forth in claim 1,
further comprising:

a keyword searching ~~means~~ unit to search for ~~searching~~ a keyword included in the directory information; and

a document searching ~~means for searching~~ unit to search contents of documents in the group of documents, and

wherein a user obtains document information using said keyword searching ~~means~~ unit and said document searching ~~means~~ unit.

15. (currently amended) An information organizing apparatus for organizing arbitrary information based on keywords, comprising:

a relation extracting ~~means for extracting~~ unit to extract one of a hierarchical relation and an associative relation between given keywords as an extracted relation, the hierarchical and associative relations representing a relation between a first keyword included in a first hierarchical relation and a second keyword included in a second hierarchical relation;

a generating ~~means for generating~~ unit to generate directory information for accessing the arbitrary information ~~with~~ by using the ~~hierarchical relation and the associative relation as links~~ extracted relation as a link between the first and second keyword; and

an outputting ~~means for outputting~~ unit to output the directory information.

16. (currently amended) A computer-readable recording medium which stores a program that causes a computer, that organizes a group of documents based on keywords, to perform ~~the steps of~~ a method comprising:

extracting one of a hierarchical relation and an associative relation between given keywords as an extracted relation, the hierarchical and associative relations representing a relation between a first keyword included in a first hierarchical relation and a second keyword included in a second hierarchical relation; and

generating directory information for accessing the group of documents ~~with~~ by using the ~~hierarchical~~ extracted relation ~~and the associative relation~~ as ~~links~~ a link between the first and second keywords.

17. (currently amended) A document organizing method, comprising ~~the steps of~~:

extracting one of a hierarchical relation and an associative relation between given keywords as an extracted relation, the hierarchical and associative relations representing a relation between a first keyword included in a first hierarchical relation and a second keyword included in a second hierarchical relation; ~~and~~

generating directory information for accessing the group of documents ~~with~~ by using the ~~hierarchical relation and the associative relation as links~~ extracted relation as a link between the first and second keywords; and

organizing the group of documents based on the directory information.

18. (new) A method for generating relations between keywords extracted from documents, comprising:

storing documents with previously assigned keywords;

obtaining an initial keyword hierarchy and an equivalent keywords list; and

extracting relations between the previously assigned keywords, including at least one of multiple ancestor hierarchical relations and associative relations based on statistical occurrence of the keywords, with reference to the initial keyword hierarchy and the equivalent keyword list.